



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2005KS44B

Title: Developing an Economic Tool to Predict the Value of Water Rights

Project Type: Research

Focus Categories: Economics, Water Use

Keywords: Ogalla, valuation, transition, spatial, appraisal

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Federal Funds: \$7,000

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Congressional District: 2nd

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Abstract

Over the past two decades, the overall increase in irrigated acres, coupled with the increased acreage of water intensive crops such as corn, suggest that overall water consumption from the Kansas portion of the Ogallala Aquifer may be increasing. Past trends in water consumption and crop mix, as well as recent economic research, suggests that efficiency gains actually might be accelerating water use and increasing the pace at which the aquifer is depleted. Governmental policy and economic research are gradually shifting toward a focus on sustainability issues and policy alternatives that achieve an absolute reduction in consumptive use. One such policy instrument is the voluntary Irrigation Transition Assistance Program. Through this policy, an absolute reduction in consumptive use will be achieved by purchasing and permanently retiring irrigation water rights in the Ogallala region of western Kansas. In order to implement this policy, the

state of Kansas needs input from the economic community on both program structure as well as the market value of water rights.

In this study, hedonic modeling procedures, along with spatial econometric techniques, are used to develop models to predict the value of water rights in the Ogallala region. A combination of geographical information systems (GIS) tools and econometric procedures is used to statistically test for and correct the presence of spatial autocorrelation. The value of water rights will be estimated as a function of parcel-specific hydrological characteristics such as well capacity, depth to water level, saturated thickness, historical water usage, and water right seniority level.

The results of this project will benefit the State in several ways. In the administration of the program, this information can be used to set the maximum acceptable bids and/or assess the reasonableness of a particular bid. The data also will be useful in program budgeting and/or predicting program success.